

USER MANUAL ENGLISH

# :02 WING



**CABRINHA** 

# **A WARNING**

DO NOT USE THIS PRODUCT UNLESS YOU HAVE READ AND UNDERSTAND THESE WARNINGS, CAUTIONS, AND INSTRUCTIONS WHICH ARE FOR YOUR SECURITY AND PROTECTION. THIS INFORMATION MAY BE SUBJECT TO CHANGE AT ANY TIME. FOR CURRENT UPDATES, PLEASE VISIT OUR WEBSITE AT: [WWW.CABRINHAKITES.COM](http://WWW.CABRINHAKITES.COM)

IF YOU ARE BELOW THE AGE OF 18, YOU SHOULD HAVE YOUR PARENT OR GUARDIAN READ THESE WARNINGS, CAUTIONS AND INSTRUCTIONS AND SHOULD NOT USE THIS PRODUCT UNLESS YOU ARE UNDER THE PROPER GUIDANCE AND SUPERVISION OF SUCH A PERSON.

The use of this product exposes the user to many unavoidable and unexpected risks, injury, DANGERS and HAZARDS. The suppliers of this product are not responsible for any damage to property or any personal injury caused by any use, misuse, abuse or irresponsible use of this product by the user.

Wing Surfing is a HAZARDOUS sport. Wings can be DANGEROUS to flyers and to anyone in the vicinity of their use. Wing Surfing must be taken seriously and we recommend that, at least in the early stages of your use, you seek the guidance of professional instructors and experienced wing surfers. Improper and/or unreasonable use of this wing may result in DEATH or SERIOUS INJURY to ANY part of your body and to OTHERS. Do NOT use your wing near power lines, airports, buildings, automobiles, trees, streets, parking lots, rocks, piers, breakwaters, buoys, etc. and keep your wing away from people and ALL obstacles. Always fly in an open area and observe wind and weather conditions, particularly in circumstances where you may encounter offshore, onshore, variable or strong winds. Do NOT attempt to use your wing on water until you are confident and comfortable with the use of the wing. Spend time to become familiar with the operation of your wing and remember that you are responsible for its operation and for the security of those around you. As you learn the sport, work within your own limitations and do NOT exceed them. If you intend to use the wing on water, always use appropriate protective gears and flotation devices and do NOT attach yourself or tie yourself permanently to the wing. The wing is NOT intended for use as a flying and/or soaring device nor indeed is it intended as a means of flotation.

# **A WARNING**

## **RECOMMENDED WING SURFING PRACTICE:**

Wing Surfing is an extremely diverse sport, with many disciplines and ability levels. As with all sports, there can be certain inherent risks. The following contains key security points to remember when operating your Cabrinha Wing.

- Wing Surfing is a **HAZARDOUS** activity and the use of Wing Surfing equipment involves the risk of serious personal injury to any part of the user's body, or death.
- Injuries are an **INHERENT RISK** of Wing surfing and the participation in Wing Surfing implies the user's acceptance and assumption of those risks.
- Children should **ALWAYS** be under adult supervision.
- It is strongly recommended that beginners take lessons.
- **ALWAYS** inspect your equipment for signs of wear and tear each time before use, check for tears on canopy or inflatable structure. Check for air leaks.
- If **ANY** products are found to show signs of wear & tear, **STOP** using the product immediately and repair or replace before further use. If in doubt about any signs of wear & tear, please contact your local vendor. Contact details are available from [www.cabrinhakites.com](http://www.cabrinhakites.com)
- **NEVER** place yourself in a situation where breakage of any one of the various Wing Surfing components would pose a risk to yourself or others, or make it difficult to return to the shore securely & unassisted.
- Make sure you use properly designed and manufactured parts from reputable suppliers.
- Take time to study the conditions including sea state, tides, currents, weather conditions and forecasts before you decide to go sailing. Beware of sailing in offshore, onshore, variable or strong winds.
- Familiarize yourself with any new location before venturing onto the water. Ask the locals to tell you about any hazards.
- Watch out for other beach users, especially swimmers and small children. Make sure you keep your board and rig under control at all times and that they don't get blown about on the beach or in the water.
- Always use appropriate protective gear and flotation devices. Wear the correct protective clothing for the conditions such as a wetsuit or a UV top.
- We **STRONGLY** recommend wearing a watersports specific helmet?
- Make sure someone knows where you've gone & when you are expected back – always sail with a buddy.
- Be aware of the conditions as they change. **ALWAYS** return to the beach if there is a significant change in the conditions. i.e. wind dropping or wind & waves increasing.
- As you learn the sport, work within your own limitations and do **NOT** exceed them.
- Do **NOT** alter, modify or change this product.
- This product is designed and manufactured only for Wing Surfing on water, snow or land.
- Keep these warnings, cautions and instructions for future reference.
- The following contains key security points to remember when operating your Cabrinha Wing and associated equipment on water, land or snow.

# **A WARNING**

## **SNOW USE GENERAL GUIDELINES**

- The points listed under the Recommended Wing Surfing Practice also apply to the use of this product on the snow. Please read the previous paragraphs even if you intend to use this product primarily on the snow.
- These Wings are intended for use on the snow as a traction device to propel a rider across wide open snow fields in a controlled and appropriate manner.
- Do NOT attempt to use this wing as a flying device. Do NOT use this wing to soar from ridges, cliffs or slopes.
- Do NOT attempt to launch yourself into the air in any manner which can create excessive impact to the rider upon landing.
- EXTREME caution must be taken when using this Wing in any mountainous region, uneven terrain or glacier. Wind conditions in these areas are notoriously unstable and can change in velocity and direction without notice.
- ALWAYS use appropriate protective gear. We STRONGLY recommend wearing a snowboarding specific helmet.
- Do NOT tether yourself to any stationary or moving object such as a stake, snowmobile, or car while flying this Wing.
- ALWAYS stay in control and be able to stop or avoid other people or objects.
- People downwind or down slope have right of way. It is your responsibility to avoid them.
- You must NOT stop where you obstruct others or are not visible.
- Whenever starting or merging with others look upwind/up hill and yield to others.
- Always use retention devices while riding to help prevent runaway equipment. If you remove the retention device for any reason, turn snowboard upside down and push the bindings into the snow to prevent runaways.
- Observe any and all posted signs and warnings
- Keep out of closed areas
- SNOWBOARD: Prior to using any lift you must have the knowledge and ability to load, ride and unload safely.
- Do NOT ride when tired or under the influence of alcohol or drugs.
- Snow terrain and riding conditions VARY CONSTANTLY! AVOID ANY man made structures, trees, tree-wells, rocks, debris, variations in terrain or slopes, avalanche areas, crevasse, cliffs, power lines, lift lines, water hazards, changes in snow surfaces or texture due to altitude and sun exposure, wind and weather changes, and any other conditions which could affect your ability to properly control your Wing.

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# CABRINHA

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## INTRODUCTION

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Thank you for purchasing this Cabrinha product and welcome to the sport of Wing Surfing. As you may know, the excitement of Wing Surfing is attracting people of all ages from all corners of the globe.

### **CAUTION:**

Wing Surfing can be overwhelming if not approached in an educated manner. That's why we have supplied this extensive user's manual. It will help to educate you about your new Wing and about the ways in which to use it. It contains information regarding the setup, care and maintenance of gear. Please note that only compatible Cabrinha parts will benefit from all of the security and performance functions associated with this Cabrinha Wing.

Please read this user manual carefully and entirely before using the Wing. This manual is not intended to replace proper wing surfing instruction, but rather to supplement it. Do not attempt to Wing Surf without appropriate instruction. It will make this sport more enjoyable, not only for yourself, but for those around you.

## IMPORTANT INFORMATION

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Wing Surfing is a hazardous sport, with many disciplines and ability levels. As with all sports, there are inherent risks of injury. The following contains key points to remember when operating your Cabrinha Wing.

- Be familiar with the set up and use of the Wing and safety leashes.
- NEVER permanently attached yourself to this Wing.
- NEVER use the Wing as a flying or soaring device.
- When inflated but not in use, secure your Wing with sand or with something heavy and non-abrasive: the more weight the better (see “Wing Care” for more information).
- Do not lend your gear to someone who has not been fully instructed on the use of inflatable Wings. Other users should also read this user’s manual and be proficient in all its points.
- Check your gear before going on the water. Insure that your Wing is rigged properly and is in working order.

## PROTECTIVE GEAR

We strongly recommend the use of the following protective gear:

- Water Sports specific helmet.
- Life Jacket, Impact Vests or Flotation Vest.
- Neoprene Wetsuit
- Gloves
- Foot Protection
- Eye Protection
- Sunscreen

## IMPORTANT INFORMATION

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### WIND, WATER, AND WEATHER CONDITIONS

- Do NOT underestimate the power of the wind.
- Be aware of unpredictable and changing weather conditions.
- Avoid “offshore” or “onshore” wind conditions.
- Avoid strong, gusty wind.
- Be careful of wave conditions, especially when learning.
- Be educated about tides and rip currents.
- Be mindful of your ability level. Do NOT wing surf if conditions are beyond your ability level.
- Be educated about air and water temperatures and wear appropriate protection against the elements.
- Do NOT use this product in thunderstorms.
- Consult an anemometer and weather stations to determine wind speeds if necessary.
- Do NOT use an oversized wing. Consult your Wind Range Chart for the correct recommended size. Use your common sense. If in doubt about what kite size to use, choose smaller rather than bigger.

Increases in wind strength may result in greater force being required to operate the Pull tab on the wrist leash. Be certain to seek the advice of a professional such as your Authorized Cabrinha Dealer about the performance of the security systems in relation to body weight.



## IMPORTANT INFORMATION

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### KNOW YOUR ABILITY LEVEL

- Do NOT attempt Wing Surfing without appropriate instruction.
- Do NOT Wing Surf alone.
- Ride together with a partner or have someone on shore who can keep an eye on you.
- Make sure you are in good physical condition before using this product.
- Make sure you are a proficient swimmer before using this product in or near the water.
- Make sure the wind and water conditions are within your ability level and that you have made the correct equipment choices.
- NEVER Wing Surf further from shore than you are reasonably able to swim back.
- ALWAYS save a reserve of energy; end your Wing Surfing session before you are exhausted.
- You are responsible for the proper operation of your Wing.

### WING SURFING LOCATION

- Observe ALL local laws and regulations regarding this product and the usage area.
- Talk to the local riders about the weather conditions and beach rules.
- Check your area thoroughly before riding your Wing.
- Be mindful and aware of the wind direction in relation to your launch area.
- Avoid areas with rocks and/or shallow or exposed reefs.
- Be mindful of tide changes. As water levels change, you may be exposed to new obstructions.
- Avoid crowded beaches and waterways.
- Be careful and mindful of other water users, including windsurfers, kitesurfers, surfers, boaters, jet skiers, swimmers, floating objects, etc.

## IMPORTANT INFORMATION

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### WING CARE

Due to the often extreme nature of Wing Surfing, a thorough approach should be taken when caring for your Wing and all its associated rigging, as well as your protective gear.

#### PREPARING FOR YOUR SESSION

- Thoroughly check your protective equipment to make sure it is in working order and in good condition.
- A frequent inspection of the Wing should be made in order to identify punctures, tears, or abrasions in the canopy, struts, or security systems.
- Do NOT rig on asphalt, cement, gravel, or other abrasive surfaces; doing so may damage your equipment. It is best to rig on sand or grass. Damage done to your equipment by rigging on abrasive surfaces will not be covered under warranty.
- Do NOT rig among sharp objects that could tear the canopy or puncture the air boom/strut and leading edge bladder.
- While setting up, secure your Wing with sand or sand bags. Do NOT secure your wing with rocks or other sharp or abrasive objects that may damage your Wing.

#### BETWEEN SESSIONS

- NEVER leave an inflated Wing unattended on the beach for a long period of time. Winds may shift or change and the Wing may become unsecured and fly off.
- Do NOT leave an inflated Wing (secured or not) directly exposed to the wind for any length of time. This allows the trailing edge to flutter excessively. Any excessive fluttering may quickly break down the finish properties of the material and reduce it's longevity. If you must leave the Wing exposed to the wind on the beach, place sand or sand bags onto the areas of the Wing, near the trailing edge until the flutter is stabilized. Do not use rocks or other sharp objects.

#### PROPER STORAGE

- ALWAYS dry your Wing prior to rolling or folding. Folding or rolling a Wing when wet may affect the color clarity and longevity.
- It is recommended to wash the Wing components with fresh water and dry before storing.
- Clear the Wing of sand or other foreign objects before stowing.
- Once it is clean and dry, stow your wing in the supplied bag in a clean, dry, cool place.
- Do NOT place heavy objects on the bag containing the Wing.
- Warning. Do not store this product at elevated temperatures or in direct exposure to UV light, for prolonged periods of time. Doing so may damage the construction and performance of this product.

## IMPORTANT INFORMATION

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### BEACH ETIQUETTE

Here are some basic things to consider when sharing beaches and water accesses with other users:

### SAFETY

- Follow ALL of the instructions outlined in this manual, other manuals and installation guides.
- Follow the instructions and rules and regulations posted at the beaches you use.
- Check with local wind sport associations and shops prior to launching in a new area. There may be local rules and regulations to follow which are not posted.
- Utilize common sense.
- Do NOT touch other people's gear, unless instructed to do so by the owner. Picking up their gear, etc. may disrupt a setup ritual they have.
- ALWAYS secure your Wing with sand or sand bags. An unmanned Wing is dangerous.
- NEVER leave an inflated Wing unattended. Winds may shift and cause the wing to become unsecured and fly off.

### SETTING UP

- Set up only the gear that you plan on using immediately. Deflate and put away your Wing when not in use.
- Set up in an area where you have plenty of space.
- Set up in a manner conducive to having multiple users in the area.
- ALWAYS keep other beach and water access users in mind when launching and landing.
- Yield to other beach users. Be courteous and cooperative.
- ALWAYS be ready to lend assistance to other water users. The favor may be returned sooner than you think.

## SETUP

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### SPRINT™ INFLATION SYSTEM

The SPRINT™ inflation system (FIG A) is a simple to use feature to quickly inflate your Wing to an even pressure. The SPRINT™ system uses a single inflation point to connect your high volume, two way Cabrinha pump (FIG B). As you pump your Wing with air, the air boom/strut and leading edge inflate quickly and simultaneously to the desired pressure. The supplied pump leash and threaded valve connection keeps your Wing under control even when pumping up directly in the wind.

Once the Wing is pumped you can choose to clip off the air to the air boom/strut (FIG C). This way if you damage the air boom/strut while in use, the rest of the Wing will maintain its pressure and, this will also eliminate air migration between the LE and airboom/strut, providing a more solid frame. At the end of the session you can choose to deflate your Wing completely by disengaging the air boom/strut clip.

You can also keep your air boom/strut inflated and put your Wing away rolled up so that the next session will

### AIRLOCK™ INFLATION/DEFLATION VALVE



THE UPPER SECTION IS THE INFLATION CAP



THE LOWER SECTION IS THE RELEASE VALVE



## SETUP

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### INFLATION BASICS

See the section on Wing Care before inflating your Wing.

- Unroll your Wing with the strut facing up.
- Make sure your back is to the wind and that the leading edge of the Wing is closest to your body. Secure the Wing with sand to keep it from flapping in the wind.
- Use the supplied pump leash to connect the pump to the Wing. This will free your hands to pump the Wing.
- Open the inflation cap by turning it counter-clockwise.
- Make sure that the release valve is seated firmly by turning clockwise. Do not over tighten the release valve when the Wing is not inflated. Doing so may twist and damage the bladder. The valve base is held in place by a Velcro disc
- Attach the pump end directly to the Airlock Valve on the Wing. No connectors are necessary for this operation.
- When inflating, hold the pump with both hands and provide even pressure to the handle. This will help maintain the life of the Pump.
- When the Wing is fully inflated, remove the pump hose and screw the inflation cap back on. Lightly turn/tighten until inflation cap is firmly secured.
- Tighten the lower release valve.
- Do not under-inflate or over-inflate the Wing. Proper inflation will make it difficult but not impossible to bend the ends of the Wing in. If it is very easy to bend the wing tips in, the leading edge is under-inflated. Your Wing should be firm enough that while on its back, the wing tips should extend into the air and the Wing should retain its shape. If the leading edge is under-inflated, it may cause poor performance.  
NOTE: The pumps are rated to 1bar of pressure, however due to wear and tear; pumps can fail at a much lower pressure.
- Once the Wing is properly inflated, turn the Wing over and secure with sand.

## SETUP

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### INFLATION PRESSURE CHART CROSSWING AND CROSSWING 2

	LE INFLATION PSI	STRUT PSI
Wing 3m	7.5	12
Wing 4m	7	12
Wing 5m	6.5	11
Wing 6m	6	11
Wing 7m	5.5	10

**CAUTION:**

This inflation pressure is for your reference only. Temperature, pressure gauge accuracy and other factors can have an effect on the final inflation pressure of your Wing. Over inflation will shorten the life span of your Wing.

### INFLATION PRESSURE CHART CROSSWING 3 AND MANTIS V2

	LE INFLATION PSI	STRUT PSI
Wing 2m	10	13
Wing 2.5m	9.5	13
Wing 3m	9	13
Wing 3.5m	8.5	12
Wing 4m	8	12
Wing 4.5m	7.5	12
Wing 5m	7	11
Wing 6m	6.5	10
Wing 7m	6	9

### INFLATION PRESSURE CHART MANTIS

	LE INFLATION PSI	STRUT PSI
Wing 2m	9	N/A
Wing 2.5m	8.5	N/A
Wing 3.1m	8	N/A
Wing 4m	7.5	N/A
Wing 5m	7	N/A
Wing 6.2m	6.5	N/A

## SETUP

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### TIPS FOR SECURING YOUR WING

- Never leave an inflated Wing unattended on the beach for a long period of time. Winds may shift or change and the Wing may become unsecured and fly off.
- Always secure your Wing with sand, using more weight than you think you need. An unmanned Wing is dangerous.
- Never secure your Wing with rocks or sharp objects (including your board); they will compromise the life of the Wing. If you do not have a sandy beach launch, consider sand bags.
- Do not leave an inflated Wing (secured or not), directly exposed to the wind for any length of time. This allows the trailing edge to flutter excessively, which can damage the Wing. If you must leave the Wing exposed to the wind on the beach, place sufficient amounts of sand near the trailing edge to minimize or stop the fluttering. Also, if possible, leave the Wing in a shaded area.
- Keep in mind other beach users and make sure your Wing will not be a danger to others.

### DEFLATING THE WING

The Wing may be deflated completely or partially for your convenience. To deflate only the Leading Edge, you must be sure that the SPRINT™ air clip is pinched closed, thereby isolating the air boom. Next, unscrew the release valve and not the inflation cap. The release valve is the lower portion of the AIRLOCK. (FIG A) After deflating, roll up each end of the Wing starting at a wingtip and moving towards the center. Clear the valve of any sand or debris; then seal the valve before stowing the Wing to prevent debris from getting inside internal bladder. To deflate the entire Wing, unclip the air clip at the air boom. Lift the neoprene hood, then unscrew the release valve. This will allow all the air to flow through the leading edge and out of the airlock.

TO DEFLATE REMOVE HOOD AND UNSCREW RELEASE VALVE.



FIG A

#### **CAUTION:**

When closing the valve on a deflated Wing, hold bladder in place to prevent twisting the bladder. Do not over tighten valve when Wing is deflated. You may tighten it further when Wing is partially inflated again.

## REPAIRS

### MAJOR TEARS

For a major tear in the Wing fabric, consult your dealer for a reputable Wing repair loft. To find a Cabrinha dealer in your area, please go to: <http://www.cabrinhakites.com/dealers.html>

### MINOR TEARS

For a minor tear in the Wing fabric, you may repair the tear with Wing repair tape. Your Wing has been supplied with an adhesive Wing repair material.

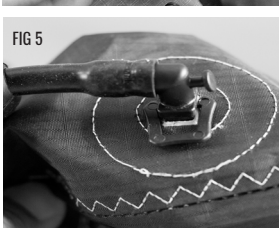
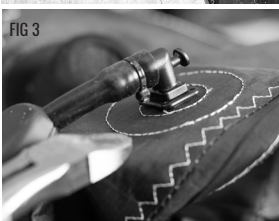
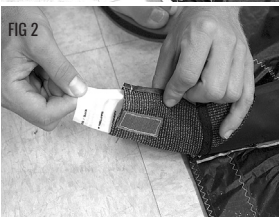
1. Clean and dry your Wing.
2. Lay the Wing flat on a clean, dry, smooth surface.
3. Cut two pieces of repair tape the same size, making sure they are each big enough to cover the entire tear.
4. Carefully cover one side of the tear with a piece of the repair tape. Gently rub the tape smoothly onto the surface of the Wing.
5. Next, cover the opposite side of the tear with the second piece of repair tape, in the same manner as before.
6. Make sure the tape is secure.

### REPAIRING BLADDERS

#### Key Points to Remember

- Before attempting to repair one of your bladders, make sure your Wing is clean and dry. Always keep your Wing pump, valves and bladders free of sand, water and other things that will dirty them.
- Make sure the bladders are deflated.
- Avoid repairing your Wing on the beach or in dirty, dusty, windy, or abrasive areas. It is best to find a clean, dry spot out of the wind. A grassy spot is ideal.
- You will need a line and a bladder repair kit (supplied with Wing) before you begin to repair the bladder.
- Keep track of all valve parts for later use.

1. First, lay the Wing out flat with the leading edge and air boom facing up.
2. Detach the Velcro closure at the end of the damaged leading edge or air boom. This will open up the sleeve and will allow you access to the internal bladder. (FIG 1.2)
3. Next, separate the Sprint inflation tube from the LE Sprint valve by first pulling up the Valve cover and then removing the Cable Tie (either by cutting off or pulling the tubing) (FIG 3)
4. Slide the air clip off of the tube (FIG 4).
5. Remove the Base Collar Clip from the bottom of the strut valve and set aside for later use. (FIG 5)

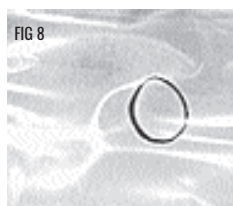




## REPAIRS

6. Tie a piece of line around the valve. Cinch it down well on the valve. (FIG 6)
7. Gently insert the valve/tube down into the strut sleeve. (FIG 7)
8. Go to the base of the sleeve and gently pull the bladder out of the sleeve. Detach the line and leave it in the sleeve. Having the line through the sleeve will allow you to easily replace the bladder once it is repaired.
9. Slide the air clip back onto the inflation tube. Inflate the bladder and clamp the tubing so that it maintains air. Do not over inflate the bladder.
10. Submerge the bladder in water to locate the hole. A bathtub or large sink full of water is best.
11. Look for bubbles to locate the hole.
12. Once you have located the leak, dry the area and mark the hole with a circle. A permanent marker works best for this. (FIG 8)
13. Dry and clean the rest of the bladder with a soft towel.
14. Again, deflate the bladder.
15. If the hole is on a flat area of the bladder, remove the backing on one of the patches and press it onto the bladder, covering the hole.
16. Set the bladder aside for approximately 20 minutes to dry.
17. Again, inflate the bladder and check to make sure it is now holding air.
18. If you have repaired the holes in the bladder, coat the entire bladder in talcum powder to assist insertion back into the sleeve. (OPTIONAL)
19. Deflate once again.
20. Tie the line from the end of the strut opening onto the valve.
21. Lay the bladder flat at the end of the strut, so that you may now feed it back into the sleeve.
22. Gently feed the valve, followed by the rest of the bladder, into the sleeve.
23. From the valve opening of the sleeve, you will pull the line out of the sleeve, while pulling the bladder back into place.
24. Once the bladder is replaced, pull the valve back into the hole of the sleeve and remove the line from its base.
25. Push the base clip between the base of the valve and the Strut Dacron. (FIG 9)
26. Inflate the strut partially to make sure the bladder fits into all four corners of the sleeve.
27. Attach the Air Distribution tube to the valve making sure it is seated all the way to the end. Apply the Cable Tie to the indented location on the Tubing and pull tight. Orientate the cable Tie to the bottom of the Valve. Cut tail of Cable tie of as close as possible. Pull the Valve cover over the assembled part and secure on the Sprint Base. (FIG 10)

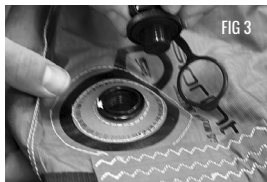
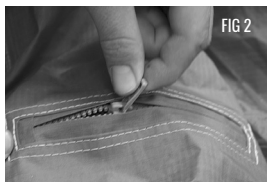
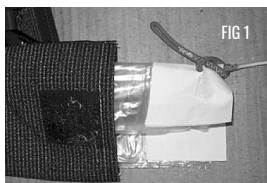
\*Reference the Tech Tips section of the website for further information.



## REPAIRS

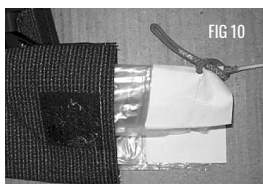
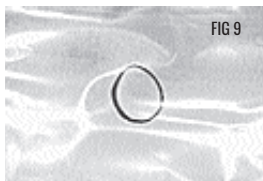
### REPAIRING LEADING EDGE BLADDERS

1. First, lay the Wing out with the struts facing up.
2. Each end of the Leading Edge (LE) bladder is folded over and secured with a Velcro closure. You will also find a zipper access pocket at the center of the LE. Undo each Velcro closure and unzip the center access pocket. This will open up the sleeve of the strut and will allow you access to the bladder. (FIG 1 & 2)
3. Separate the Airlock Valve Assembly from the leading edge. Carefully lift the retainer ring from the bladder. Using the small pull tab on the Velcro ring, carefully peel the Airlock base off of the inside of the LE. Keep track of the assembly for later use. (FIG 3,4,5)
4. Next, separate the Sprint inflation tube from the LE Sprint valve at the affected strut by first pulling up the Valve cover and then removing the Cable Tie (either by cutting off or pulling the tubing) (Fig 6).
5. Slide the air clips off of each tube. (FIG 7).
6. Then remove the Base Collar Clip from the bottom of the LE valve and set all parts aside for later use. (Fig 8).
7. Keep track of the valve parts for later use.
8. For the next step, you will need two flying lines. Starting with one end of the leading edge, tie one line on/or around the wing tip end of the bladder. Cinch the line down well. Using the second line, follow the same procedure with the other end of the leading edge bladder.
9. Next, gently push the valves down into the strut sleeve.
10. Now, access the leading edge bladder through the zippered access pocket near the leading edge valve. (FIG 2)
11. Gently pull one side of the bladder out of the sleeve at a time, leaving the flying line through both sides of the sleeve. Having the flying line through the sleeve will allow you to easily replace the bladder once it is repaired.
12. Once out of the sleeve, attach the air clips. Inflate the bladder and close all clips and the airlock valve so that it maintains air. Do not over inflate the bladder.
13. Submerge the bladder in water to locate the hole. A bathtub or large sink full of water is best. You will need to submerge one section of the bladder at a time in order to locate the hole. Look for air bubbles to locate the hole.
14. Once you have located the leak, dry the area and mark the hole with a circle. A permanent marker works best for this. (FIG 9)
15. Dry and clean the rest of the bladder with a soft towel.
16. Again, deflate the bladder.
17. If the hole is on a flat area of the bladder, remove the backing on one of the patches and press it onto the bladder, covering the hole.



## REPAIRS

18. Set the bladder aside for approximately 20 minutes to dry.
19. Again, inflate the bladder and check to make sure it is now holding air.
20. Deflate once again.
21. Tie each flying line to the corresponding ends of the bladder.
22. Lay the bladder flat near the center access pocket and fold it, accordion style, so that you may feed each end back into the sleeve without twisting the bladder.
23. Starting with one end, feed the bladder into the access pocket.
24. Walk to one end of the leading edge and gently pull on the flying line, while holding the end of the sleeve. Slowly feed the bladder back into this side of the sleeve. (FIG 10). The bladder should protrude past the end of the sleeve enough so that the Bladder Tag is visible. Pulling the bladder past this point, may cause potential issues when the kite is inflated.
25. Next, follow the same instructions with the other side of the bladder, until the valves are near the holes and the bladder is fully inserted.
26. Tuck the ends of the bladder into the corresponding tips.
27. Once the bladder is replaced, pull the valves back into the holes of the sleeve. (FIG 11)
28. Next, place the Sprint™ valves back into position. (FIG 12)
29. Making sure not to catch the internal bladder in the zipper, close the center LE zipper pocket. Next, fold over wingtip access pockets and secure the Velcro strips.
30. Re-attach the Airlock Valve Assembly.
31. Partially inflate the Leading Edge to make sure the bladder fits into all four corners of the sleeve.
32. Reassemble the Sprint™ valves and connect the air distribution tubes to each strut.



# GLOSSARY

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## FREQUENTLY USED WING SURFING & WIND TERMINOLOGY

### A

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#### SPRINT TUBES

Tubes that connect the LE bladder to the strut bladders.

**AIRLOCK** - a 2 part valve that allows a single point for inflation and deflation of the kite.

#### SPRINT PINCH CLAMPS

Clips that prevent air transfer between the LE and the struts.

### B

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**BAR (unit)** – A unit of pressure

• 1 bar = 14 PSI

• 1 mbar = 0.015 PSI

**PSI** – A unit of pressure. Pounds per square inch

• 1 PSI = 68.9mbar

#### BEAUFORT SCALE

A system for estimating wind strength based on the effects wind has on the physical environment (e.g. the behavior of waves, smoke, etc.). Instruments are not used to determine wind strengths in this point scale (0 = calm to 12 = hurricane).

#### BODY DRAGGING

This is an instructional tactic / step in which the rider flies the wing while in the water, but without the board. The rider will launch, then walk to the water, and basically drag in the water while practicing flying, and self-rescue techniques.

#### BLADDER

The inner inflatable tube found within the leading edge and the struts of the kite. (Imagine a bike-it has both a tire on the outside and an inner tube which holds air).

### D

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#### DOWNWIND

The direction in which the wind is traveling.

### G

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#### GUSTY WIND

Wind is inconsistent and varies considerably from one wind strength to another.

#### GYBING

The motion in which the rider changes the direction of the board he/she is riding. The rider switches from a starboard tack to a port tack or vice versa.

### H

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#### HARNESS

A piece of equipment used to temporarily attach the rider to the control bar harness line. This enables the rider to save energy by utilizing their body weight and all of their muscles to hang on to the kite. Most common are the waist harness (attaches around the torso) and the seat harness (attaches to the waist and around the legs).

### I

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#### INFLATABLE WING

A wing with inflatable tubes designed to float the wing.

### K

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#### KNOTS

A measure of speed based on nautical miles.

1 knot = 1 nautical mile per hour.

1 knot = 1.15 miles per hour.

1 knot = 1.85 kilometers per hour.

### L

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#### LEADING EDGE (LE)

The front inflated tube of your wing.

#### LEEWARD

The downwind side of the wing surfer.

#### LOFTING

Lofting occurs when the wing is above the riders head in the neutral position. Instability in the wind can cause sudden vertical force and lift a rider off of their feet.

#### LUFF

A term used to describe what happens to the wing in a lull.

## GLOSSARY

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### LULL

A term used to describe wind when it lessens in strength, for any amount of time.

### M

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#### MPH

Miles Per Hour. A measure of speed.  
1 mph = 1.6 kilometers per hour.

### N

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#### NEUTRAL POSITION

This is the position just above the rider's head in the sky. Although in this position the wing may feel steady and may feel like it has the least amount of power or pull, it is also the position in which on land the rider is most susceptible to lofting. On the water, the neutral position can be utilized to rest while you reel in your board, but on land, we strongly suggest you do not utilize the neutral position. After launching, it is best to make your way to the water without delay. Do NOT linger on land with the wing in neutral position. It is VERY dangerous.

#### NEUTRAL ZONE

This is the area that includes the neutral position and the area to the left and right of the rider. It encompasses the most upwind or windward positions in which to fly the wing. When flown here, the wing has less power or pull than when it is in the power zone. However, use caution when the wing is in this zone, especially when on land, and especially in gusty wind conditions.

### O

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#### OFFSHORE

Wind is blowing from the shore directly or to a great extent out to the water.

#### ONSHORE

Wind is blowing directly or to a great extent directly from the water toward the land.

#### OVER-POWERED

A situation in which the rider has a wing too powerful for his/her ability level, weight, strength, and/or wind conditions.

### P

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#### PLANING

The point in time in which the rider gets the board skimming on the water.

#### POWER ZONE

This is the area in front and to the sides of the rider, but excluding the neutral position and zones. It is the area in which the wing has the most power and pull. When flown in this area, the wing can be powerful and dangerous, so avoid flying your wing in this zone when learning. Use extreme caution when flying the wing in this zone.

**PUMP** – Device used to inflate the wing.

# GLOSSARY

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## R

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### REACH

A direction of travel relative to the wind direction. Generally 90-160 degrees off the wind.

## S

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### SIDE OFFSHORE

Wind is blowing from either the left or the right and from the shore out to the water. This is a combination of offshore and sideshore wind.

### SIDESHORE

Wind is blowing from the left or from the right, parallel to the shore. Ideal wind direction for kiteboarding.

### SIDE ONSHORE

Wind is blowing from either the left or the right and from the water toward the land. This is a combination of onshore and sideshore wind. Utilize caution when operating your kite in or near water in this wind direction.

### SPRINT™

Single Point Rapid Inflation Technology.

### STRUTS

The outer fabric tubes found on your wing. They house the inner inflatable bladders, which are filled with air to give structure to the wing.

## U

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### UNDER-POWERED

A situation in which the rider has a wing not powerful enough for his/her weight, strength, and/or wind conditions.

### UPWIND

The direction from which the wind is blowing.

## W

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### WATER STARTING

The motion of the rider in which he/she goes from sitting or lying in the water to standing on the board.

### WINDWARD

The upwind side of the kiteboarder.